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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,362	02/06/2002	Thomas Gordon Beck Mason	30794.61USWO	1006

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EXAMINER

NGUYEN, DUNG T

ART UNIT PAPER NUMBER

2828

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,362

Applicant(s)

MASON ET AL.

Examiner

Dung (Michael) T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-8 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/17/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-3 and 5-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5-6 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the multiple quantum wells (MQW) are offset in the active region, does not reasonably provide enablement for the offset multiple quantum wells (MQW) included in the waveguide layer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. As suggested by the examiner, the claims would overcome the rejection by amending as following:

- Claim 5: wherein the waveguide layer is a buried heterostructure waveguide, **and the multiple quantum wells** include offset multiple quantum wells (MQW) that provide the laser's output.

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- Claim 6: wherein the waveguide layer is a ridge waveguide, **and the multiple quantum wells** include offset multiple quantum wells (MQW) that provide the laser's output.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-3, 7-8, and 27 are rejected under 35 U.S.C. 102(a) as being anticipated by Mason et al. (Widely Tunable Sampled Grating DBR Laser with Integrated Electroabsorption Modulator in IEEE Photonics Technology Letters, Vol. 11.NO.6, June 1999).

With respect to claims 1 and 27, Mason et al. disclose a tunable laser source comprising a widely tunable semiconductor laser comprised of an active region including multiple quantum wells (MQWs) grown on top of a thick, low bandgap, single common waveguide layer (entire page 638), wherein both the waveguide layer and the active region are fabricated between a p-doped region and an n-doped region (it is inherent that the waveguide layer and the active region must be sandwiched between a pn doped junction and when electrical current passes from the p-doped region to the n-doped region through the active region, a laser light beam is generated); and

an electro-absorption modulator integrated into the semiconductor laser, wherein the electro-absorption modulator does not include quantum wells (QWs) and instead uses Franz-

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Keldysh effects for modulation (as admitted in the amended specification filed on 01/17/06, when using Franz-Keldysh effects means that the electro-absorption modulator does not include quantum wells), the electro-absorption modulator shares the waveguide layer with the semiconductor laser, and the waveguide layer is designed to provide high index tuning efficiency in the laser and good reverse bias extinction in the modulator (pages 638-640).

With respect to claim 2, Mason et al. disclose the semiconductor laser includes a sampled grating back mirror, a phase control section, a gain section, and a sampled grating front mirror (page 638, second column).

With respect to claim 3, Mason et al. disclose the single common waveguide layer is used for the sampled grating back mirror, phase control section, gain section, sampled grating front mirror, and modulator (page 638, second column).

With respect to claim 7, Mason et al. disclose the waveguide layer includes a blocking junction that blocks lateral current leakage in the laser (page 639, first column) and reduces parasitic junction capacitance of the modulator (it is inherent that since Mason et al. disclose a blocking junction between the laser and the modulator and therefore the function of reducing parasitic junction capacitance of the modulator must be obtained).

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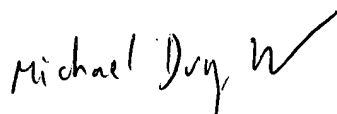
With respect to claim 8, Mason et al. disclose the semiconductor laser is rapidly tuned over a wide wavelength range by proper adjustment of control currents for the mirrors (page 639, Abstract).

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Michael Dung Nguyen

3/22/06